DIRECT TESTIMONY OF

ANDY T. BARBEE

ON BEHALF OF

SOUTH CAROLINA ELECTRIC & GAS COMPANY

DOCKET NO. 2013-2-E

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION WITHIN SOUTH CAROLINA ELECTRIC & GAS COMPANY ("SCE&G" OR "COMPANY").

A. My name is Andy Barbee. My business address is P.O. Box 88, Jenkinsville, South Carolina. I am employed by SCE&G as the Director of Nuclear Training at the Virgil C. Summer Nuclear Station ("VCSNS" or "V.C. Summer").

Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND AND YOUR BUSINESS EXPERIENCE.

A. After six years of service in the United States nuclear Navy, I began my career in the electric utility industry in 1983 when Carolina Power & Light Company ("CP&L") (now Progress Energy) hired me to work at the Shearon Harris Nuclear Station, which at that time was under construction. During my tenure at CP&L from 1983 – 2005, I held several leadership positions at the Shearon Harris Nuclear Station. More specifically, I worked as a licensed

operator training instructor, shift technical advisor, shift manager, superintendent of operations support, and superintendent of operations training. While at CP&L, I was granted a Senior Reactor Operator License in 1986 by the Nuclear Regulatory Commission ("NRC"), and in 1993, I received a Bachelor of Science degree in Nuclear Science from the University of Maryland.

In 2005, I became employed by Dominion Resources, Inc. ("Dominion") and worked at Dominion's Surry Nuclear Power Station until 2009. During my employment at Dominion, I served as the supervisor of operator training and the training manager at Surry Nuclear Power Station.

In November 2009, I was hired by SCE&G to work at V.C. Summer as Director of Nuclear Training. As SCE&G's Director of Nuclear Training, I am responsible for all training related activities at V.C. Summer, which includes the new nuclear units under construction.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to review the operating performance of VCSNS during the period from January 1, 2012, through December 31, 2012 ("Review Period").

Q. WHAT ARE SCE&G'S OBJECTIVES IN THE OPERATION OF VCSNS?

A. SCE&G's primary objective at VCSNS is safe and efficient operation. The Company also strives for excellence in all phases of operation of the facility. The

station's key focus areas of safety, reliability, outage and work management, work force development, and organizational effectiveness constitute the Company's core business plan elements. SCE&G's constant improvement in these areas over the years has facilitated VCSNS's outstanding service record. Furthermore, SCE&G's business objectives are focused on maintaining a competitive production cost for the generation of electricity using nuclear fuel.

Q. WHAT HAS BEEN THE COMPANY'S EXPERIENCE WITH THE PERFORMANCE OF THE VCSNS?

A. VCSNS has performed well during the Review Period. SCE&G continuously meets or exceeds all NRC requirements and Institute of Nuclear Power Operations ("INPO") standards. Consistent with the provisions of Section 58-27-865 of the South Carolina Code of Laws, as amended, V.C. Summer's net capacity factor based on reasonable excludable nuclear system reductions during the Review Period was 101.8%, and the gross generation output was 7,568,930 megawatt hours.

Q. DID VCSNS EXPERIENCE ANY FORCED OUTAGES DURING THE REVIEW PERIOD?

A. No. VCSNS did not experience any forced outages during the Review Period.

Q. DID VCSNS EXPERIENCE ANY PLANNED OUTAGES DURING THE REVIEW PERIOD?

A. Yes. During the Review Period, VCSNS experienced one planned outage. On October 12, 2012, the unit began to reduce its generation output in a controlled manner and was shut down completely at 12:31 a.m. on October 13, 2012, to conduct V.C. Summer's 20th scheduled refueling outage ("RF20").

Q. HOW MANY DAYS DID VCSNS OPERATE PRIOR TO RF20?

A. With the opening of the generator output breaker on October 13, 2012, SCE&G ended its first "breaker to breaker" cycle in the history of VCSNS. A "breaker to breaker" cycle is an industry term recognizing a plant that operates continuously between refueling outages and only occurs when plant reliability is very high. In this instance, VCSNS was connected to the electric grid without interruption for 501 days, thereby setting a continuous run record for SCE&G.

Q. HOW LONG DID RF20 LAST?

A. RF20 lasted fifty-five (55) days during which time the Company met all technical objectives and completed scheduled maintenance activities. The reactor returned to criticality on December 6, 2012, and the outage ended with the closure of the generator output breaker on December 7, 2012. The planned outage, scheduled for thirty-nine (39) days, was exceeded by sixteen (16) days due to

repair work on the reactor vessel head. The outage was completed with no nuclear safety events.

Q. PLEASE EXPLAIN THE KEY MAINTENANCE AND MODIFICATION TASKS SCE&G ACCOMPLISHED DURING RF20.

A. During the refueling outage, approximately one-third of V.C. Summer's 157 fuel assemblies were replaced, and scheduled maintenance work that cannot be performed when the plant is in operation was conducted. During this time, nearly 4,300 routine tasks including preventative maintenance, corrective maintenance, and surveillance testing tasks were completed successfully. SCE&G completed a number of key maintenance and modification tasks during RF20, a few of which are described below.

- **Reactor Vessel Head Inspection.** Part of the scope for RF20 was to perform reactor vessel head inspections. During these inspections we visually inspected the reactor vessel head and used robotic inspection techniques to assess internal welds. These inspections are designed to identify anomalies which can be repaired well before any actual problem occurs. The inspections revealed four penetrations that required repair. As part of the planning for this inspection, V.C. Summer and Westinghouse personnel developed a detailed plan that

could quickly be implemented if repairs were needed. The plan was implemented and the repairs were completed successfully.

- **230 Kilovolt Switchyard Upgrades.** Two new switchyard bus tie breakers were installed to improve the reliability of the power grid to address postulated fault conditions. In addition, a number of switchyard disconnects, relays and associated components were replaced.
- **Service Water to Emergency Feed Water Cross Connect Piping Modification.** This piping modification was implemented to support future installation of an interior lining (Cured in Place Piping) to the Emergency Feedwater system. The future lining will inhibit biofouling of the inner pipe wall.
- **Main Turbine Control Valve Inspection.** This scope of work consists of internal inspections and preventative maintenance to ensure proper operation.
- **Replacement of "A" Batteries.** The periodic replacement of these batteries ensures that important components and instruments continue to operate in the event of power interruption.

Q. WHEN WILL THE NEXT REFUELING OUTAGE OCCUR?

A. Refueling outages are scheduled every 18 months to replace depleted fuel assemblies. Maintenance and testing that cannot be done with the plant on-line

are also conducted during the refueling outage. SCE&G's next refueling outage, Refueling Outage No. 21, is scheduled for April 2014.

Q. PLEASE EXPLAIN THE ROLES OF INPO AND THE NRC WITHIN THE NUCLEAR INDUSTRY AND DESCRIBE ANY RANKINGS RECEIVED BY VCSNS FROM THOSE AGENCIES.

A. INPO is a nonprofit corporation established by the nuclear industry to promote the highest levels of nuclear safety and plant reliability. INPO promotes excellence in the industry in the operation of nuclear electric generating plants. For the applicable reporting period, INPO rated VCSNS's overall performance as excellent.

The NRC is responsible for the licensing and oversight of the civilian use of nuclear materials in the United States. During the Review Period, the NRC reported that VCSNS operated in a manner that preserved public health and safety and fully met all cornerstone objectives.

Q. WHAT IS THE USED FUEL STORAGE CAPABILITY FOR VCSNS?

A. V.C. Summer has sufficient capacity for used fuel storage in the spent fuel pool through the 23rd refueling outage in 2017. This allows capacity for a full core off-load in addition to the used fuel stored in the pool.

Q. IN ADDITION TO THE SPENT FUEL POOL, WHERE WILL SCE&G STORE ITS USED FUEL?

A. SCE&G is currently constructing a dry cask storage facility which will be used in conjunction with the spent fuel pool at VCSNS to store the fuel that was once used at V.C. Summer to generate electricity. Dry storage is a method of storing used fuel that has already been cooled in the spent fuel pool for several years. With this method of storage, used fuel is removed from the spent fuel pool and placed into a stainless steel canister which is then welded shut; a canister holds 37 fuel assemblies. The stainless steel canister provides containment of the used fuel. Each canister is then surrounded by additional material, such as steel and concrete, and stored on a concrete pad at the dry cask storage facility. Exhibit No. ___ (ATB-1), a copy of which is attached hereto, is a rendering that shows the planned location of SCE&G's storage facility in relation to VCSNS and the expected appearance of the storage facility after it is constructed.

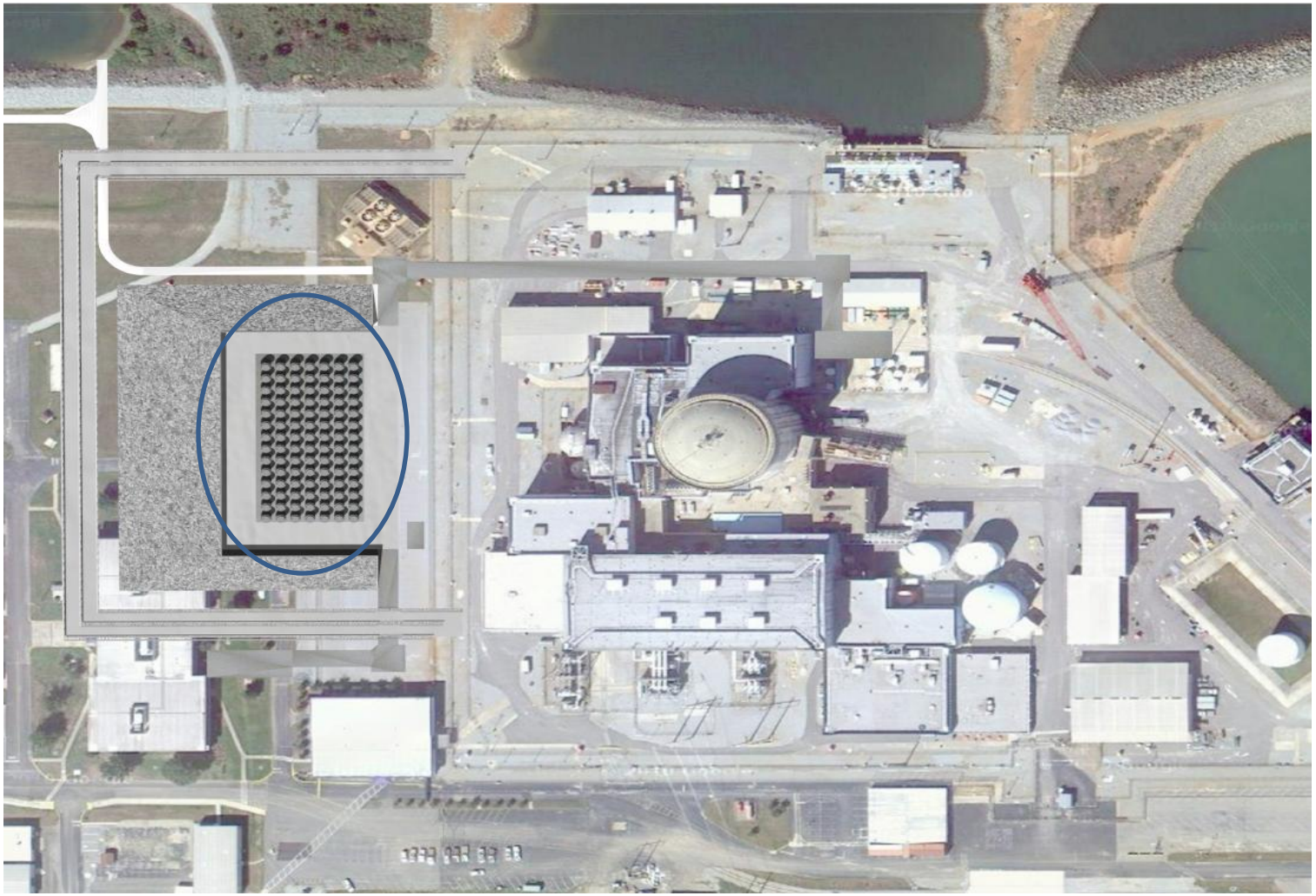
Q. WHEN WILL SCE&G'S DRY CASK STORAGE FACILITY BECOME OPERATIONAL?

A. SCE&G's dry cask storage facility is scheduled to be in-service by 2015. Thereafter, the Company will relocate a portion of its used fuel from its spent fuel pool to its dry cask storage facility.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

Fuel Storage/Dry Cask Project



Fuel Storage/Dry Cask Project